FIELD BOTANISTS of ONTARIO Newsletter

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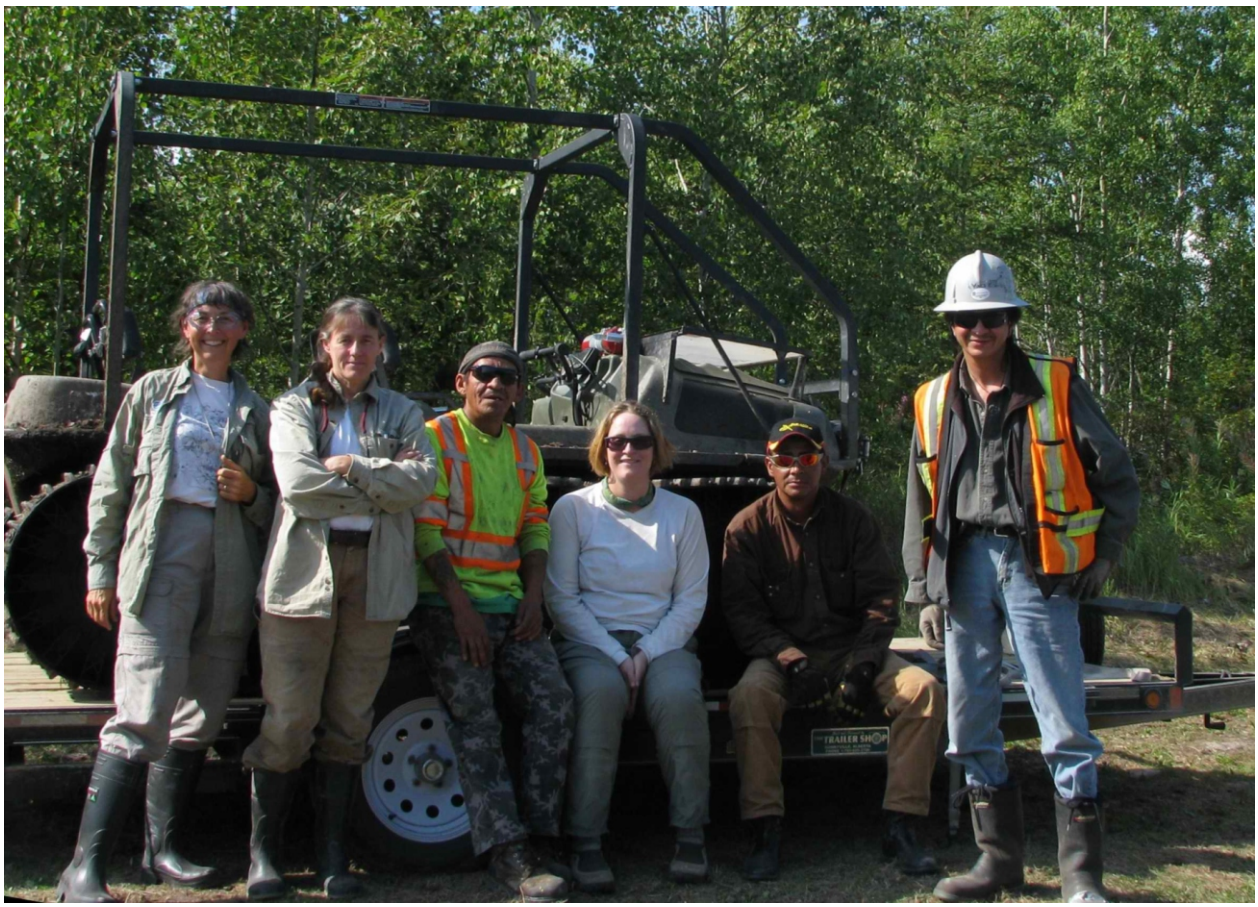

End of summer rare plant survey crew (see p.9) Credit: L.Kershaw

President's Message

They're planting Tulip Trees (*Liriodendron tulipifera*) in parks and along streets in southern England. Northern Red Oak (*Quercus rubra*) is a common tree in urban parks, growing to a huge size, bigger than any of the Red Oak trees I've seen in North America. I've seen Black Walnut (*Juglans nigra*) and Common Hackberry (*Celtis occidentalis*) as well: Hackberry, in some literature, is called an ugly tree, so perhaps it does not grow as well in England as it does here. My cousin planted Red-osier Dogwood (*Cornus stolonifera*) in his garden in London; a suggestion from a landscape architect. The Museum of Garden History in London grows Spiderwort (*Tradescantia sp.*) in honour of the elder and younger John Tradescant, both gardeners to Charles I, and among the first horticulturalists to import North American species to Britain. It is lush and thriving a few metres from the Tradescants' tomb.

I can't help wondering whether this is a great idea. A quick visit to some English native plant websites provides the information that North American species planted for horticultural purposes can certainly become invasive in the U.K. as Eurasian plants can here, though they do not always. For example Red Oak crops up in many areas of the UK, though it is not considered invasive. The most notorious of invasive Canadian plants in England are Canada and Tall Goldenrods (*Solidago canadensis* and *S. altissima*, respectively), impossible to miss along railway lines and roadsides. Lots of other Ontario species have become a problem: Jewelweed (*Impatiens capensis*) is invading floodplains, Pitcher Plant (*Sarracenia purpurea*), of all things, is out-competing native sundews in British peatlands, and both Canada and Nuttall's Waterweed (*Elodea canadensis* and *E. nuttallii*), sold originally as water plants, are choking British waterways. We keep doing it to ourselves. Then, too, some of the invasive culprits are common to both Britain and Canada: Giant Hogweed (*Heracleum mantegazzianum*) is spreading through both the British and Canadian country sides, Black Locust (*Robinia pseudoacacia*) is springing up along utility rights-of-way and Himalayan Balsam (*Impatiens glandulifera*) is abundant in shady, moist habitats.

Non-native plants are part of our landscape; in many cases almost impossible to eradicate. At their best they provide

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Standard source for most scientific names and authorities of vascular plants:

Newmaster, S.G., A. Lehela, P.W.C. Uhlig, S. McMurray and M.J. Oldham. 1998. *Ontario Plant List*. Ontario Ministry of Natural Resources, Ontario Forest Research Institute, Sault Ste. Marie, Ontario. Forest Research Information Paper No. 123, 550 pp. + appendices.

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The FBO is a non-profit organization founded in 1984 for those interested in botany and conservation in Ontario.

Field Trip Reports

Joany's Woods
September 20, 2008

With our group gathered at the Boot Hill entrance to Joany's Woods on this beautiful day, the flock of migrant Snow Geese (*Chen caerulescens*) winging across the sky was the herald of an auspicious beginning. When we exited at Vernon Road five and a half hours later, we had added more than 20 species to the 250 resident species already on the preliminary checklist of vascular plants provided by our trip leader Jane Bowles. One highlight, as well as a first for Joany's Woods, was the discovery of the endangered Spoon-leaved Moss (*Bryoandersonia illecebra*). This is only the seventh recorded location for this species in Canada. Another find not previously recorded was Autumn Coral Root (*Corallorhiza odontorhiza*) which is a rare species in Ontario (S2). It is not commonly seen owing to its sparse distribution (fewer than 20 documented recent records), small size and late season flowering. A third highlight was Carey's Wood Sedge (*Carex careyana*), also provincially rare (S2) with 18 records for the province. The large leaf bract on the flowering stem is diagnostic and readily distinguishes it from the otherwise similar (and common) Plantain-leaved Sedge (*Carex plantaginea*). No doubt this tract will continue to yield other significant finds in the future.

Joany's Woods lies on the Ausable River in Middlesex County, near Sylvan, Ontario. The 367 acre property forms part of an area that is recognized nationally as a Carolinian Canada site, provincially as an Area of Natural and Scientific Interest (ANSI) and locally as an Environmentally Sensitive Area (ESA). Jane provided us with an aerial map of the property showing two circular connecting trails named the Inch Loop and the Ivey Loop after two major benefactors. There is also a Riverside Trail that we did not travel.

If you Google Joany's Woods, you will find it under the Thames Talbot Land Trust website, which is the organization that purchased (mostly through public donations) the property in 2007 and now runs it as a nature reserve. On this website you can track the funding donations and bequests offered by individuals and organizations for the purchase. Similarly you can sense the energy and spirit of community and nature group efforts which manifested as fund-raising tours, hikes and walkabouts on the property in order to secure it for public benefit and preservation. “Joany's Woods Saved Forever” proclaims a triumphant headline. In fact, Jane is Chair of Property Management for the Trust and so she has a wealth of knowledge regarding the Trust and Joany's Woods. We could see the enthusiasm and excitement in Jane's face and voice as she shared this information and guided us toward the entrance.

The track was washed out so we left our cars on the roadside to walk to Joany's Woods parking lot and the entrance. Along the way Common Elderberries (*Sambucus canadensis*) set us musing about making jams and pies. A small creek of crystal clear water provides a place for trout to spawn as it flows beside the track and disappears into the swamp hardwood forest. We imagined dropping in our fishing lines and lifting out a savoury Brook Trout (*Salvelinus fontinalis*). European Stinging Nettle (*Urtica dioica*) begged for attention in its bright green garb and immature green fruits. Wood Nettle (*Laportea canadensis*), the only nettle with alternate leaves, is also present further along the trail. Their coarse, stinging hairs seem to say, “Look but don't touch”. They lend their name to the English phrase “to nettle” meaning “to annoy”. There was nothing annoying about this sylvan place.

Swamp hardwood forest forms the landscape of the Boot Hill entrance and a boardwalk helps the walking. In the spring the chorus of Spring Peepers (*Pseudacris crucifer*) is deafening. Now fall, there is only the sound of our footsteps and our voices. The swampy ground is home to the Sensitive Fern (*Onoclea sensibilis*). Beyond the boardwalk beneath the canopy we find the native deciduous Winterberry (*Ilex verticillata*). In Europe they grow cultivars to sell as holly branches. Jane points out other trees forming the understorey including Witch-hazel (*Hamamelis virginiana*) and a Dogwood (*Cornus*), of which there are six species listed for this tract: Alternate-leaved (*C. alternifolia*), Silky (C. *amomum*), Eastern Flowering (*C. florida*), Gray (*C. foemina*), Round-leaved (*C. rugosa*) and Red-osier (*C. stolonifera*). Jane points out the shiny leaves, underhairs on the mid-vein and the “corn flake bark” on a Black Cherry (*Prunus serotina*). An Arrow-wood is one of four *Viburnum* species on the list which include Maple-leaved (*V. acerifolium*), Nannyberry (*V. lentago*) European Highbush Cranberry (*V. opulus*) and Southern Arrow-wood (*V. recognitum*). We see the familiar Christmas Fern (*Polystichum acrostichoides*), Wild Ginger (*Asarum canadense*), Thicket Creeper (*Parthenocissus inserta*), False Solomon's Seal, also called False Spikenard (*Maianthemum racemosum*) and a Pyrola (*Pyrola* sp.). There is also Marginal Wood Fern (*Dryopteris marginalis*), Rattlesnake Fern (*Botrychium virginianum*), Wild Basil (*Clinopodium vulgare*) and the aforementioned elusive Autumn Coral Root. How rich the forest is.

How is it that the vegetation eventually made me feel I was in another place? Texas perhaps, or Oklahoma? Well, the clump of White Baneberry or Doll's Eyes (*Actaea pachypoda*), the berries as large as any I have seen, hung over the trail like a Texas boast. Red Baneberry (*Actaea rubra*) is also listed. Then we saw a Giant Ragweed (*Ambrosia trifida*) growing as high as an elephant's eye, well at least 7 feet high. However, *Newcomb's Wildflower Guide* says it can grow as tall as 15 feet high! Our lone *Newcomb's* was passed around for more complete identification on many occasions.

When much further along the trail, someone told me that an eft lives under the boardwalk, I mentally pictured the troll who lay in wait under the bridge in the children's story *The*

Three Billy Goats Gruff. However the red-spotted eft is an Eastern Newt (*Notophthalmus viridescens*). I was told the eft lives its life in a different order from other amphibians. It is born in the water, spends its youth on land, (the eft stage) then matures to a life in the water. So yes, it may be lying in wait of its adulthood. I thought of it living snug and safe under the boardwalk when we trip-trapped across.

Throughout our trip, Jane revealed plans for developing a protected natural site for the enjoyment of citizens. Large blocks are already in place at the entrances to prevent access to ATVs, and damage to the boardwalk. The Thomas Talbot Land Trust sign displaying uses and misuses of the property has been knocked down, willfully perhaps, and will be resurrected. Lesser and older trails will be blocked off while the main trails are marked and will be enhanced. Jane notes a dead tree that is a hazard and must come down. A bench is already on a ridge for a hiker to survey the forest canopy. A stewards' group walks the trails to pick up litter and help manage the property. They, along with good neighbours, are the eyes and ears of Joany's Woods and report ATVs or other misdemeanors on the trails. The police act on complaints and place stiff fines on prohibited activities. In one valley wetland we saw the deep ruts of vehicle tracks circling around the trees and among the magnificent Jack-in-the-Pulpit (*Arisaema triphyllum*), Skunk Cabbage (*Symplocarpus foetidus*) and Spicebush (*Lindera benzoin*).

Joany's Woods includes a mixture of fine Carolinian forest, swamps, coniferous and deciduous plantations and old field meadows. Emerging from forest to old fields we observe Eastern White Pine (*Pinus strobus*) and the Autumn Olive (*Elaeagnus umbellata*), its branches laden with red berries. Close up the berries have a marbled appearance and they have an interior seed and a slightly sour taste. Jane tells us that these shrubs were planted in past years with the intention of providing a wildlife habitat, and for attracting birds. It is not a standard of practice today because Autumn Olive is a non-native species and can become invasive. Now it grows rampant on the meadow and is too difficult to eradicate. In full fruit it makes a picturesque sight. So does the Climbing Bittersweet (*Celastrus scandens*) and White Heath Aster (*Symphyotrichum ericoides)*) we notice as we skirt the meadow.

Gray Dogwood shows white berries, not blue, therefore they are not ripe. Serviceberry (*Amelanchier* sp.), Shagbark Hickory (*Carya ovata*), Eastern Hemlock (*Tsuga canadensis*), Nannyberry, Closed Gentian (*Gentiana andrewsii*), Heart-leaved Aster (*Symphyotrichum cordifolium*) are present. This latter Aster will be added to the list which already includes Panicled Aster (*Aster lanceolatus*), Large-leaved Aster (*Eurybia macrophylla*) and New England Aster (*Symphyotrichum novae-angliae*). Near the hiker's bench are verdant Tulip Tree (*Liriodendron tulipifera*) seedlings and saplings growing freely in open space. Large mature Tulip Trees form part of the forest canopy.

Returning to the woods we note Prickly-ash (*Zanthoxylum americanum*) and in the distance a large stand of dead Hickory trees, attacked by the Hickory Nut Beetle. An Ironwood/Blue Beech/Muscle Wood (*Carpinus caroliniana*) exhibits its characteristic muscle-like-ridges. At a junction of the Inch Loop and the Ivey Loop stands a large Black Walnut (*Juglans nigra*) with a branch stretched over the trail like a welcoming arm. “A forester would have a different eye for that tree” says Jane. Her remark reminded me of the ne'er-do-wells who impersonated parks workers in my city and poached a huge black walnut from a downtown park to profit from its commercial value. Relics of previous logging do exist here in a few blackened rotting stumps of immense girth that sit back off the trail. Now the trees in Joany's Woods are spared a similar fate by the good graces of the public.

There are many American Beech trees (*Fagus grandifolia*) throughout the forest. On one section of the trail the floor beneath them is covered with a shag-like carpet of Beechdrops (*Epifagus virginiana*) as far as the eye can see. A patch of light illuminates an individual plant that seems to glow with red striae, becoming more showy than other more robust plants. A Chanterelle Mushroom (*Cantharellus cibarius*) possesses its own glow on a twin beech slope. Its segmented cap is open wide like a bright yellow flower. Above our heads on the smooth bark of an American Beech are vague circles with hieroglyphics in the middle. Is it possible these are initials carved decades ago by roaming farm lads or lasses, Joany and her friends perhaps? Here among the huge American Beeches a large branch has fallen. Its rough bark tells us it fought a Beech bark disease and lost. Nearby there is another branch that has grown into its own tree trunk thus forming a circle.

Elsewhere, a stilted Eastern Hemlock has grown on top of a tree stump now rotted away leaving the hemlock roots arching long and stilt-like into the ground. A Sugar Maple (*Acer saccharum*) has out-growths on the trunk caused by sap flux. Other trees include Slippery or Red Elm (*Ulmus rubra*) and Bladdernut (*Staphylea trifolia*).

As we examine tree trunks, Jane suddenly exclaims “This tree is dead!” She has been standing with her hand on the trunk while she speaks to us. This happens to her often with her students, she says, that without looking up she can identify a dead tree by touch. Don't we laugh and tease, “Jane is a tree-hugger.” Yet how does the tree impart its energy to her…or not?

We live in a society where sight has become the dominant sense. Smell, touch, taste, hearing played a more prominent role in lives of other eras than they do today. Botanists and other naturalists use the latter senses wisely for identification purposes, though less than sight. Our group practices on two identical side-by-side trees. Can we tell the difference between living and dead by touch? We will this ability in 60 seconds that has taken Jane a career to develop. Even with sight, checking for variations in colour, breaking a piece of bark, I cannot tell one iota of difference. Then I check my footing on leaving and discover the root of the dead tree turning black and being overtaken by an unidentified black fungus with tar-like globules. For sure, without looking upward, I know the tree is doomed. Alas, sight has made me a non-doubting Thomas.

In the valley of a ridge while we silently identify plants – Shining Clubmoss (*Huperzia lucidula*) and Spring

Clearweed (*Pilea fontana*) we hear the sound of trickling water. A spring originating high up in the fields travels downward under the forest floor and emerges from under the roots of a large Maple with mossy trunk. On the other side of the ridge a similar spring flows energetically over its earth bed, cascades with loud gurgling into a deep opening beneath another tree, travels underground and appears further downhill to form a wetland area. Surely children's author Thornton Burgess set his animal tales in such a delightful forest as this, for here is the Laughing Brook.

A Wild Turkey (*Meleagris gallopavo*) feather on the trail, White-tailed Deer (*Odocoileus virginianus)* tracks, a Northern Flicker (*Colaptes auratus)*, a Wood Frog (*Rana sylvatica)*, and a Cooper's Hawk (*Accipiter cooperii)* – note the long tail – are the few signs of wildlife that we see, except for the Snow Geese. Our snail expert, Bill McIlveen, finds and identifies a White-lipped Forest Snail (*Triodopsis albolabris*), a Three-toothed Forest Snail (*Triodopsis tridentata*) and the carnivorous Disk Cannibal Snail (*Haplotrema concavum*), that feeds on other snails. So many people with their own areas of expertise and by their presence enhance the experiences of this group.

We eat our lunch at a small regenerating sandpit which is one of a series that we can't see from the trail. The standing water is home for dragonflies and darning needles that cavort and light on our knees in their mating posture. Beggar Ticks (*Bidens sp*.), plants not invertebrates, also called Devil's Beggar-ticks (*Bidens frondosa*) live up to their name when I find them in my home after the trip. Ladies' Tresses, (*Spiranthes* sp.) the most common orchid is nearby but out of sight.

One highlight of the trip was to observe the provincially rare Green Dragon (*Arisaema dracontium*) which I for one have never seen. It is a good idea to look it up beforehand. I wish I had done so to know it was similar to Jack-in-the-pulpit. As we searched for the one seen one week previously, we passed many scarlet fruit heads which I took for Jack. Alas, what we found was one wizened-up brown leaf looking less like a Green Dragon and more like something the dragon left behind. Accompanying berries were from the Green Dragon Jane told us.

Toward the end of our day, shrieks of joy erupted ahead of us on the trail. Sharp eyes had spied and identified a mat of the endangered Spoon-leaf Moss. No matter it was located five meters after stepping out of Joany's Woods. Somewhere inside the boundary has to be another patch of Spoon-leaf Moss waiting to be discovered.

At the Boot Hill entrance to the trails there are actually *two* signs. The Joany's Woods sign is elegant and upright. It displays the additional words "In memory of Joan Doherty". Jane and others told us the story behind the words at the beginning of our trip. It goes like this: Joan Doherty was the 22 year old daughter of the former owner. Some decades ago she was killed in a car accident by a drunk driver, three days before her wedding. She was buried in her going away dress. When the Thames Talbot Land Trust took possession of the property her family asked that they retain the name Joany's Woods which the Trust was happy to do. The story lent poignancy to our outing. It gives additional pause to reflect on and celebrate the care and preservation of the natural beauty of Joany's Woods. I departed that day with my heart yearning, "I must come back. I must come back to this beautiful place."

Elaine McShane

Bryophytes (the *other* plants) in Joany's Woods

Spoon-leaved Moss (*Bryoandersonia illecebra*) - a SARA (*Species at Risk Act*)-listed, nationally endangered species - delighted hikers who explored Joany's Woods on September 21, 2008, following the FBO annual general meeting near Grand Bend. The two colonies of the North American endemic, Carolinian bryophyte were found near the end of the hike, just outside the boundary of the Joany's Woods property. The full extent of the population, one of seven now known in Canada (all in Ontario) has yet to be documented.

Spoon-leaved Moss is a handsome devil: a robust, julaceous, dark green to copper-green plant that proliferates by creeping along its substrate. In the United States, it produces spore-filled capsules periodically along the way, but capsules have not yet been documented in the field or in herbarium specimens of Canadian plants. To date, only female plants of this dioicous* species have been found north of the border.

Attention to Spoon-leaved Moss generated by its SARA listing has resulted in the discovery of several new populations in the past five years. How could such an astonishing and apparently rare plant live undetected in heavily-botanized southern Ontario? For the answer, one need only ask oneself why it's also a bit unusual to be reading about mosses in an FBO newsletter. Understanding of the abundance and distribution of mosses lags behind that of vascular plants because not many people are slithering around on their bellies, loupe in hand, taking notice of the little guys.

Muddy t-shirts aside, FBO botanists and other wild plant enthusiasts do themselves and the plants a favour when they turn their attention to bryophytes. There is still much to learn about mosses and liverworts in Ontario, and the chances of discovering something of interest on any given field trip are very high. Discovering something beautiful, naturally, is guaranteed.

Although it might take a magnifying glass to see them, features used to distinguish bryophyte species (leaf shape, ornamentation of the cells and leaf margins, to name just a few) are similar to those used to identify wildflowers. Looking at specimens and photos of some of the locally significant species in advance of an outing helps in creating a search image. The best way to detect the greatest number of species of mosses and liverworts at a site – including the rarest species - is to take stock of the available substrates (rotten logs, hard logs, tree trunks, stream banks, seepy cliffs, shaded dry rocks, etc.) and to take a close look at several examples of each type. The Ontario Natural Heritage Information Centre tracks bryophytes, and documenting occurrences of significant species is very important in bringing the understanding

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Field Botanists of Ontario 25th Anniversary Celebration

Guest speakers (clockwise from top left) Mike Oldham, Wasyl Bakowsky, John Riley, Rachel Gagnon and Graham Buck.

Sunday April 5th, 2009 was a momentous day for the Field Botanists of Ontario. This is the day we celebrated our 25th year – 2009! It was very exciting to be part of the development and design of this day and too see so many members come out and celebrate it. The day began with a member mixer including refreshments and breakfast treats. This gave members old and new a chance to meet and in some cases catch up on old friendships.

A history lesson by John Riley and Bill McIlveen was very informative. Members learned about the beginnings of the FBO out of *The Plant Press* and how the organization has grown and changed over the last 25 years. Both Melinda Thompson-Black and Wasyl Bakowsky gave interesting talks that filled up our morning. Melinda brought the new provincial *Endangered Species Act* to light for us. We learned about how species are listed and how far protection can go for such species. Wasyl discussed the Natural Heritage Information Centre's (NHIC) work on the rare flora and ecosystems of Northern Ontario. Wasyl had some fantastic photos of rarely recorded species along the Lake Superior shore. Many of the species that were recorded are disjunct from the main populations in the Hudson Bay Lowlands.

After lunch the FBO presented the Goldie Award for a second time. This award is intended for botanists that have excelled in their field and made major contributions to the field of botany. This year's award was given to Dr. George

Clockwise from left to right: George Bryant, Carol Brotman and Jim Lane; Bill Draper and George Bryant; Sarah Mainguy, Melinda Thompson-Black and Natalie Iwanycki; Bill McIlveen; Melinda Thompson-Black; Nancy Falkenberg (centre).

Argus who wrote the *Atlas of Rare Plants of Ontario*. He was also instrumental in identifying and categorizing willows; a difficult group of plants to decipher. Dr. Argus gave an intriguing acceptance speech, which gave the audience a peak into his fascinating life. He developed his interest in willows initially in Alaska while working for the railroads clearing them and then for the university trying to identify them.

This was followed by three more presentations. Mike Oldham from the NHIC presented on that organizations newest edition of the *Rare Vascular Plants of Ontario* (the last edition was published in 1999). The reasons for the update included a decade worth of fieldwork by botanists throughout Ontario broadening the knowledge of the distribution and status of vascular plants in Ontario. The second reason was the multitude of taxonomic and nomenclatural changes, largely stimulated by the *Flora of North America*. Mike presented the rational for a number of species status changes and had some fantastic pictures.

Next we listened to Graham Buck's presentation on fire as a restoration tool. He showed us many examples of the use of fire to restore different landscapes. One interesting example was the used of fire to promote the regeneration of the endangered American Colombo (*Frasera caroliniensis*). Fire was used in the restoration of a woodland containing American Colombo and the size of the colony increased.

The final presentation was by Rachel Gagnon on the threat of invasive species to our landscape. She discussed a variety of threats including those currently effecting us (Garlic Mustard, *Alliaria petiolata*) to even greater threats that have not reached this far north (Kudzu, *Pueraria lobata*). This was an interesting FBO early spring event and allowed many old and new friends to meet and discuss botanical issues before the busy season began.

Lesley McDonell

2008 Goldie Award

Presentation Speech for Dr. George Argus by FBO President Sarah Mainguy

We are honoured to be the one giving the Goldie Award to Dr. George Argus. I think Goldie would have been pleased. I'll try to give you some idea of why we feel he has contributed so much to field botany in Ontario in as few minutes as possible.

Dr. Argus is presently Curator Emeritus at the Canadian Museum of Nature. He has used his position there to accomplish many things, but if I could be forgiven for grouping them, they seem to split into two areas. He is best known for his passion for the genus *Salix* (willow) and has provided the treatment for *Salix* identification for the *Flora of North America* project, as well as individual treatments for the floras of Oregon, California, Washington, Alaska and Saskatchewan, and this is certainly not a complete list. He has also published on his long-standing interest in the relationship between willows and their habitat.

Secondly, he is also known for his work in compiling information on rare plants and their habitats in Canada. With David White, Catherine Keddy and Kathleen Pryor he spearheaded, compiled and edited the information for the four volume *Atlas of the Rare Plants of Ontario*, which provided range maps, references, notes on status and habitat for 574 plants. It most importantly provided habitat descriptions, which allows us to focus on the presence of rare plants as indicators of rare habitats. The *Atlas* provided the foundation for the present understanding of the distribution

In addition to the publications mentioned above, the following is a partial list of other publications by George Argus:

Argus, G. W. 2002 onwards. The interactive identification of native and naturalized New World *Salix* using Intkey (DELTA). http://aknh.uaa.alaska.edu/willow. An interactive key to New World *Salix* based on the Argus DELTA database. The files, including Intkey, *Salix* database, and text instruction on its use, must be downloaded to your computer. There are links to other *Salix* books and papers.

Argus, G.W. 2008. A guide to the identification of *Salix* (Willow) in Alberta: http://aknhp.uaa.alaska.edu/willow/pdfs/GuideSalixAB2008.pdf

Argus, G.W. 2007. *Salix* (Salicaceae) distribution maps and a synopsis of their classification in North America, North of Mexico. *Harvard Papers in Botany*, Vol. 12, No. 2, pp. 335-368. http://aknhp.uaa.alaska.edu/willow/pdfs/Argus_2007_Synopsis_Maps.pdf

Argus, G.W. 2004. A guide to the identification of *Salix* (willows) in Alaska, the Yukon Territory and adjacent regions July 2004 workshop on willow identification. http://aknhp.uaa.alaska.edu/willow/pdfs/GuideSalixAK-YT11May05.pdf

Argus, G.W. 2006. Guide to *Salix* (Willow) in the Canadian Maritime Provinces (New Brunswick, Nova Scotia, and Prince Edward Island) http://aknhp.uaa.alaska.edu/willow/pdfs/GuideMaritimeSalix28JUN06.pdf

Argus, G. W. 2006. Guide to the identification of *Salix* (Willow) in Illinois, Indiana, Ohio, and Pennsylvania. http://aknhp.uaa.alaska.edu/willow/pdfs/GuideSalixMIDWEST%2024APR2006.pdf.

G. Aiken, M.J. Dallwitz, L.L. Consaul, C.L.McJannet, L.J. Gillespie, R.L. Boles, G.W. Argus, J.M. Gillett, P.J. Scott, R. Elven, M.C. LeBlanc, A.K. Brysting and H. Solstad (1999 onwards). *Flora of the Canadian Arctic archipelago: Descriptions illustrations, identification, and information retrieval*. Version: 29th April 2003. http://www.mun.ca/biology/delta/arcticf/

Argus, G.W. 1999. "Classification of *Salix* in the New World". Version: 5 July 1999. *Botanical Electronic News* (BEN) # 227.

of rare plants by the Natural Heritage Information Centre, who have continued to refine the information, removing some plants and adding others as the information from the rare plant atlas led them to new discoveries.

Several of his colleagues emailed me and said they were overjoyed that Dr. Argus was receiving this award. They used words like "an incredible person", "fantastic to work for", and said he was enthusiastic about passing on his identification skills to others, modest, has a great sense of humour and what is more, he can sing and dance. Field botanists have much to be grateful for. In providing a treatment for *Salix* in California he subsumed dozens of taxa into five, eliminating the difficulties in keying this genus.

He has passed on his passion for plants to a whole cohort of botanists across Canada.

Dr. Argus retired in 1995. You'd think after a forty-year career working on one of the most difficult groups of plants he would get some rest, but he still talks enthusiastically of prospective field trips to some of the more remote parts of North America. He has enthusiastically embraced the idea of using interactive computer keys to aid in the identification of willows, and is still refining these keys today.

There's one more thing. There is an incredible story on the internet of this same George Argus, who climbed an as yet unclimbed face of Mount Denali (also called Mount McKinley) in 1954. The party of four climbers met with a terrible accident, falling off the mountain during the descent. One of the climbers was killed, and George was very badly injured. The surviving members of the party had to leave him to get help, and he was alone for seven days, parceling out his food so that when the rescuers at last returned he still had four days of food left. Characteristic of George, he insisted that the rocks he had been collecting during the ascent be taken out with the rescue team. This seems to me so reminiscent of the kind of toughness that characterized the early botanists like John Goldie who walked across half of southern Ontario; eager to risk the most difficult and remote terrain to follow the relationship between remote habitats and their flora. I think Goldie would have been pleased and proud to award this to Dr. George Argus.

The Spirit of Exploration and Discovery

Hello Cheryl,

I just wanted to send a quick note to the FBO Executive and all members in follow-up to the recent 25th Anniversary Celebration at RBG. Ken and I have been FBO members for almost 15 years and although we have not been all that active in the group since having kids, we have continued to enjoy the newsletters and peruse the range of trips and workshops offered each year.

When we received notice of the 25th Anniversary event we agreed this would be a perfect opportunity to re-connect with the group. Indeed, it turned out to be that and so much more. Over the course of the day we were able to chat with friends and associates, take a virtual journey through the FBO's past, and get to see fascinating and diverse presentations by some of Ontario's foremost botanists (and foremost botanists in the making). But the highlight for us, and I suspect for many present, was the impromptu award acceptance speech by George Argus. He reminded us, with modesty, candour and humour, that discovery (in botany and in life) is most likely when we remain open to all possibilities. He also illustrated how the pursuit of discovery can be a difficult path sometimes made easier by the realization that it must be fun, otherwise it is pointless.

After a quarter century, the FBO continue to provide opportunities for botanists of all skill levels to explore new places and consider the wonderous diversity that remains all around us. Even with all the advances in the genetic sciences, there is still a place and need for good field identification skills (and people who think rain, bugs and getting occasionally lost are just part of the fun). I think this bodes well for the organization and believe the 50th Anniversary will be as memorable as the 25th.

The day reminded me that while we might not all be as adventurous as George Argus, it is the spirit of exploration and discovery that drives so many botanists and makes them as diverse and as fascinating as the plants they seek out. Many thanks to the FBO Executive for organizing and hosting this event, and for all those who contributed and attended.

Sincerely,

Margot Ursic

Fabulous Fall Fungi

Discover the wonderful world of mushrooms and other fungi in this 2½ day workshop. All experience levels welcome. Hands-on identification, plus discussions on ecology, uses and etymology. Dates: Sept 29 to Oct 2, 2009. Cost: $295; includes tuition, meals, accommodation, use of lab space & microscopes. Location: Queen's University Biological Station. Details: www.queensu.ca/biology/qubs/events.html. Instructor: Richard Aaron (natureteacher1@gmail.com).

The Seventh Sister?

W.D. McIlveen

A mischievous weed that Frenchmen and pigs eat when they can get nothing else – Cobbett 1846

Cobbett apparently had little respect for the humble little plant we call Purslane (*Portulaca oleracea*). Generally, it is regarded as a weed owing to its great ability to take over disturbed sites in gardens and field crops. Once established, it maintains a tenacious hold on the location through long-lived seeds, through a prolonged seed production period, and by virtue of its ability to regenerate new plants from broken, fleshy stems and leaves. Despite its undesirable characteristics, it is sometimes grown and offered for sale as a potherb and has an interesting tale of its own to tell.

Purslane is identified in the most recent published Ontario vascular plant list (Newmaster *et al*. 1998) as being a non-native or exotic species introduced from elsewhere*. Studies have shown that the species actually was present in North America long before Europeans arrived[1]. The species was part of the culture of the First Nations peoples and it there that we need to look for the story of Purslane.

There is a well-established trio of plants that were grown together as agricultural crops by First Nations peoples. The trio included Corn (*Zea mays*), beans (*Fava* spp.), and squash (*Cucurbitae*). These three species became identified as the *Three Sisters* in ancient Iroquoian, Huron-Wendat and Mohawk tradition. The Iroquoian name for the sisterhood translates to "Our life" or "Our support", indicating the importance of these species. Intercropping of the three works very well. Together these species made up a significant part of the staple plant foods and the combination grew well together in the fields and also complimented each other nutritionally in the human diet. Beans in particular were important in that they could contribute atmospheric nitrogen fixed within the nodules formed on their roots. Corn represents a completely different plant species. The story of how it was developed from wild grasses native to the Americas is in itself a very interesting episode in human domestication of plants. It is now entirely dependent on human intervention for its continued existence. But that is a story for another time.

Other plants were grown for food in the Americas by First Nations peoples. Potatoes, for example, were another extremely important crop in South America although they were apparently never utilized in our part of the world. Quinoa (*Chenopodium quinoa*) is likewise an important crop species that apparently never made it to our area. By comparison, sunflower is a known crop historically grown in our area. Other species such as tobacco (*Nicotiana rustica*) were actively cultivated and a number of other species were utilized but it is not always clear which species were cultivated as agricultural crops and which were utilized as wild plants. The subject of our present discussion, Purslane, most likely falls into that latter category.

To appreciate the status of Purslane in our area, we need to go to Crawford Lake located on the Niagara Escarpment a few kilometers south of Campbellville, Ontario. That lake has a particular characteristic (meromictic) that for the most part causes the sediments formed each year to be laid down in fresh layers annually. The layers or varves in the sediment can be readily distinguished and the age of the sediments determined by counting backwards from the most recent (uppermost) layer. It is possible to extract pollen and other materials from each layer to show the changes that have gone on in the surrounding area over many centuries. Most of the present discussion revolves around the results of studies conducted on the sediments of Crawford Lake, although additionally, a few other nearby water bodies have strengthened the evidence provided by studies at Crawford Lake.

When the studies of sediment cores at Crawford Lake began, it was soon discovered that corn pollen made up a significant part of the pollen present. It was suspected that corn was grown in the area close to the lake and that these crops were the source of the pollen. While some pollen might have blown into the lake, the quantity of pollen present was too great to be accounted for by this means. Corn pollen is very heavy and doesn't travel far before ending in the ground. So how did all that corn pollen get to the lake?

It was suspected that it was carried there by First Nations people. It is known that Purslane pollen was also present in the sediments from times predating European settlement[2] . This gave a clue for one theory. That theory suggested that the aboriginal agriculturalists were making use of a plant that was present in their cornfields. They would take the Purslane to the Lake to wash it. In doing so, they would also be transporting some soil to the lake where it would be washed off the plants. That soil in which the Purslane would be growing came from below the corn plants and could therefore have a heavy load of corn pollen. By this means, the corn pollen was transported from the field to end up in the lake sediments.

More recently, McAndrews and Turton[3] have described the discovery that Canada Geese feeding in the cornfields were transporting the pollen of corn and other species from the cornfields to the lake. Now we have two plausible mechanisms to account for the presence of corn and other pollen in the lake.

There is no evidence to suggest that the First Nations actively cultivated Purslane along with their corn so it is difficult to regard the species in any numerical sequence in the sisterhood. Presumably, once it became established in an agricultural field, it could persist from year to year by its own devices. As such, it was most likely merely used as a convenient food material present in the fields along with the cultivated plants.

The historical evidence suggests that the First Nations peoples used Purslane both raw and cooked and such use was noted in the reports of early European explorers. In Ontario, the Crawford Lake evidence indicates that the species was present in the province before 1380 AD. Seeds of Purslane have been found in Mexico at the Zohapilco site that dates to 6000 to 4500 BC[4]. Clearly, the designation of Purslane as an adventive species in Ontario needs to be reevaluated and it should be recognized as a native species.

**However, Morton and Venn's (1990) Ontario vascular plant checklist considers the species native to Ontario. Bill makes a good case here, and I will change the status of* Portulaca oleracea *in the NHIC Biotics database from exotic to native. -MJO*

References

[1]Erichsen-Brown, C. 1979. Use of plants for the past 500 years. Breezy Creek Press, Aurora, Canada. 510 pp.

[2,4]Byrne, R. and J. H. McAndrews. 1975. Pre-Columbian Purslane *(Portulaca oleracea L.)* in the New World. *Nature* 253:726-727.

[3]McAndrews, J. H., and C. L. Turton. 2007. Canada Geese dispersed cultigen pollen grains from prehistoric Iroquoian fields to Crawford Lake, Ontario, Canada. *Palynology* 31: 9-18.

...President's Message cont'd from inside front cover

colour, wildlife habitat and interest in old fields and other disturbed habitats. However, at worst, invasive non-native plants are some of the greatest threats to our most fragile habitats: particularly prairies, savannahs and alvars. Ravine forests in southern Ontario are becoming unrecognizable because of the ecosystem-wide changes wrought by Norway Maple (*Acer platanoides*) and Common Buckthorn (*Rhamnus cathartica*). A plant's abundance in its native habitat is not necessarily an indication of its invasiveness in other countries. In Britain, Purple Loosestrife (*Lythrum salicaria*) is quite well-behaved, contrary to its status in Canada: common, but not usually occurring as a monoculture. We need to take a hard look at what we plant for our pleasure. Surely it should become common practice to screen for invasiveness, or develop control methods before introducing new species.

Sarah Mainguy
President

Editor's Corner

On the cover photo are rare plant botanists Linda Kershaw, myself, and Tracey Etwell with Nu Nennè assistants Virgil Grandbois, Kevin Scanie and Vincent Francois. Linda Kershaw is the author of numerous books on rare and common plants in Alberta and other North American locations, and a generous mentor of up and coming botanists. She is the former student of 2008 Goldie Award recipient George Argus and upcoming 2009 recipient John Morton. Curiously, Linda's husband Peter, a biogeographer like myself, was the graduate advisor of my graduate advisor. Tracie Etwell is a former Ontario botanist now residing in Alberta.

Cheryl Hendrickson
Editor

... cont'd from p. 3

of mosses into line with that of other plant groups.

*'Dioicous' is the bryophyte version of 'dioecious'. The difference in terminology is intended to reflect the diploid and haploid (respectively) nature of the plants bearing the reproductive structures (entertainingly reviewed at http://www.anbg.gov.au/bryophyte/case-studies/-oicy.html).

Jennifer Doubt
Bryologist and Manager
Canadian National Herbarium at the Canadian Museum of Nature

Common Names for Mosses?

Aside from some very common or distinctive species, common names for mosses are mostly not in common use. There *are* common names for most species out there, and they'd be handy to have in use for lots of reasons, but it's a bit tricky to list them. Here's why:

One resource is the ITIS web page (http://www.itis.gov/), where one can find out the USDA common name for any species. However, the common names they suggest for mosses seem a bit artificial and formulaic, rather than being in the traditional spirit of a vernacular name. For example, the common name they give for most of the *Amblystegium* species is "Amblystegium moss", and those for most if not all of the *Anomodons* is "Anomodon moss".

The common name of *Bryoandersonia illecebra*, in Canada, which has come into relatively common use since its SARA listing, is "Spoon-leaved moss". Its French name is "Andersonie charmante", which translates as "charming Andersonia". ITIS, predictably, calls it "Bryoandersonia moss". Thus, I'm hesitant to suggest that the ITIS names be listed in the article.

On the other hand, some years ago, Janice Glime published a series of articles in *Evansia* in which she compiled all the vernacular names from all the cultures for which she could find records (and then translated as necessary into English). For *Amblystegium varium*, she found "Variable willow leafed moss" and "Grove creeping moss". For *Anomodon attenuatus* she found "Common tree apron moss", "Attenuated tail moss", "Narrow cattle tongue moss", and "Whip baron moss". Since bryologists would tend to call it "*Anomodon attenuatus*", selecting one from the list would be a bit arbitrary and subjective on my part.

With permission from a land trust representative, a few bryophyte specimens were collected along the trailside during the FBO hike, when time permitted. The following twenty-five species were documented, barely scratching the surface of the non-vascular plant flora of the Joany's Woods:

Amblystegium varium, *Anomodon attenuatus*, *Atrichum altecristatum*, *Brachythecium oxycladon*, *Brachythecium rutabulum*, *Brachythecium salebrosum*, *Bryoandersonia illecebra*, *Dicranella varia*, *Dicranum viride*, *Entodon seductrix*, *Eurhynchium pulchellum*, *Fissidens taxifolius*, *Hypnum pallescens*, *Leskea sp.*, *Lophocolea heterophylla*, *Plagiomnium ciliare*, *Plagiomnium cuspidatum*, *Plagiothecium cavifolium*, *Plagiothecium laetum*, *Platygyrium repens*, *Pohlia nutans*, *Radula complanata*, *Steerecleus serrulatus*, *Taxiphyllum deplanatum*, and *Tetraphis pellucida.*

Jennifer Doubt

the duff layer

A Note on *Acer* x *wyonii*

The Alternate-leaved Maple, (*Acer* x *wyonii*) a rarity on any field trip, nevertheless proliferates hugely with all the one-cent Canadian coins our mint produces. My curiosity about how this botanical anomaly originated was indirectly answered by a book published last year by the Royal Canadian Mint on its first one hundred years.

The cent we know originated in 1937, the work of British engraver George Kruger-Gray (his initials still appear beside the leaves). Doubtless he had no *Acer* species outside his window, but he did honour Canada's heraldic tradition. The year 108 saw Canada's first home-minted coin, a 50 cent silver piece bearing on the reverse two maple boughs, alternate-leaved so leaves, each with ten or circling to left and right from bottom to top. But the story begins in 1858 in London. Then the British government first determined that the Province of Canada should have its own coinage. The British Royal Mint produced 1-, 5-, 10- and 20-cent coins designed by Leonard Charles Wyon, of a family whose engraving skills had been passed down since the 1700s. His one-cent coin bore a wavy circle from which 16 alternate maple leaves grew. The other coins had Maple (*Acer* sp.) boughs similar to what later coinage was to have. And here I believe is the connection.

Centenary replica of the first coin struck on Canadian soil in Ottawa. Credit: A. Proctor

Those two boughs copy the two boughs on the reverse of the British sovereign of the time, except that on the latter the boughs bear not Maple leaves but Laurel (*Laurus nobilis*) leaves, which in nature of course do grow alternately.

Thus was crossed, it seems, Canada's unique hybrid. And so I propose that it be known henceforth as *Acer* x *wyonii* V. (the V. for the monarch whose loyal subject crossed it for us).

Alan Procter

References

Royal Canadian Mint: 100 Years of History, Les Édtions Stromboli, 2008.
The 1911 Encyclopaedia Britannica under "Wyon".